

Turing Test -- 條件反射

亂世

—— 條件反射

Turing Test 亂世 AI/A Modern Approach 亂世 Turing Test 亂世 Nature
AlphaGo Zero 亂世 AlphaGo Zero [1]

1949 亂世 leukotomy 亂世

亂世

亂世

亂世 leukotomy 亂世

亂世 Leukotomy & BRAIN Initiative

Leukotomy 亂世

1 亂世 personalities & mental diseases 亂世 personalities 亂世
 亂世 BRAIN Initiative 亂世 [2]

2 亂世 leukotomy 亂世 leukotomy 亂世 BRAIN
Initiative 亂世 AlphaGo 亂世

3 亂世 personality & intelligence 亂世 Walter Freeman 亂世
personality & intelligence 亂世 [3]

亂世 personality & intelligence 亂世 personality & intelligence 亂世
 亂世

亂世 leukotomy 亂世

亂世 Turing Test 亂世 Nature & AlphaGo Zero 亂世 superhuman
 亂世 superhuman 亂世 generic & human 亂世

亂世 leukotomy 亂世 Nature & AlphaGo Zero 亂世 superhuman 亂世

-peer review Peer review

leukotomy BRAIN Initiative

Technological Singularity AlphaGo

Nature AlphaGo Zero AlphaGo Zero superhuman performance
superhuman generic human superhuman superhuman

AlphaGo Zero AlphaGo Master superhuman AlphaGo Master
generic superhuman game

AlphaGo Zero superhuman
AlphaGo Zero

AlphaGo Zero superhuman
AlphaGo Zero

AlphaGo Zero superhuman game
superhuman

AlphaGo Zero superhuman

Technological Singularity

Deepmind [4]

AlphaGo Master AlphaGo Master AlphaGo Master
AlphaGo Zero AlphaGo Master AlphaGo Master
AlphaGo Master

AlphaGo Zero AlphaGo Master AlphaGo Zero [5]
AlphaGo Master 16 AlphaGo Zero 18
AlphaGo Zero 14 16 45

1) Nature Magazime AlphaGo Deepmind AlphaGo Zero
AlphaGo Master

2) AlphaGo Zero local trap AlphaGo Zero superhuman
AlphaGo Zero

AlphaGo Zero AlphaGo Master AlphaGo Master
AlphaGo Master AlphaGo Master [6] Nature
AlphaGo Zero AlphaGo Master AlphaGo Master deep-learning
AlphaGo Master

AlphaGo Zero [7] superhuman AlphaGo Zero

AlphaGo generic human Deepmind AlphaGo AlphaGo AlphaGo AlphaGo

AlphaGo AlphaGo [8] AlphaGo

Turing Machine AlphaGo AlphaGo AlphaGo Zero AlphaGo Master AlphaGo Zero AlphaGo Zero

[9]

Turing Machine

Turing Machine Universal approximation

Socratic method

Karl Popper [10]

Neurosciences human specific intelligence

Alan Turing Geoffrey Hinton Demis Hassabis AlphaGo

Demis Hassabis deep-learning reinforcement AlphaGo Zero generic superhuman Geoffrey Hinton

Turing Machine Turing Machine Geoffrey Hinton Turing Machine Alan Turing

Dialogue Concerning the Two Chief World Systems [11]

The Sceptical of Chemist

On the Origin of Species

human specific intelligence
big data big data
BRAIN Initiative big data human specific intelligence

Big data AlphaGo

Dialogue Concerning the Two Chief World Systems [11]

Karl Popper

The Sceptical of Chemist

On the Origin of Species

big data

[12]

Karl Popper

Karl Popper

big data

big data

[13]

big data

图灵测试（Turing Test）是评估机器智能的一个标准，它通过让人类评估者与机器和真人进行对话，来判断机器是否具备人类水平的智能。

人工智能 AI: A Modern Approach 无人驾驶汽车 driverless Car SAE level 5 人类特定智能 human specific intelligence

Neurosciences have shown that human specific intelligence is based on Technological Singularity [14].

A horizontal row of 24 small, empty rectangular boxes arranged in a single row.

10

A decorative horizontal bar consisting of a series of small, evenly spaced rectangles.

A decorative horizontal bar consisting of a series of small, evenly spaced rectangular blocks, likely made of wood or a similar material, arranged in a repeating pattern.

[15]

[16] 〔中略〕
〔17〕

A horizontal row of 20 empty rectangular boxes, likely used for input fields or placeholder text in a form.

1

Technological Singularity □ AlphaGo Zero □ superhuman □

Technological Singularity □ AlphaGo Zero □ superhuman □ 2016 [18] □

~ ~ ~ ~ ~ ~ ~ ~ ~

[1] AI@A Modern Approach Aristotle... was the first to formulate a precise set of laws governing the rational part of the mind."(On page 5)

Galileo Galilei - Dialogue Concerning the Two Chief World Systems

Immanuel Kant 伊曼努爾·康德

Gödel's theorems

脳の構造と機能の研究によって、脳は「a precise set of laws governing the rational part of the mind」

脳の構造と機能の研究によって、脳は「a precise set of laws governing the rational part of the mind」

[2] BRAIN Initiative 脳の構造と機能の研究によって、脳は「a precise set of laws governing the rational part of the mind」
mental diseases
anxiety disorders like depression and post-traumatic stress disorder
obesity and eating disorders
bipolar disorder
and mental retardation
other disorders
diseases

BRAIN Initiative 脳の構造と機能の研究によって、脳は「a precise set of laws governing the rational part of the mind」
mental diseases
Big Data

Down's syndrome BRAIN Initiative 脳の構造と機能の研究によって、脳は「a precise set of laws governing the rational part of the mind」

[3] Leucotomy in England and Wales, 1942-1954 9284 41 28 25 2 4

personality intelligence 25 personality intelligence clinical condition 41 28 25 clinical condition personality intelligence leucotomy

Renato M.E. Sabbatini Even lobotomy's proponents admitted that only one third of the operated patients would improve, while one-third remained the same, and one-third got worst Leucotomy in England and Wales, 1942-1954 <http://www.cerebromente.org.br/n02/historia/lobotomy.htm>

one third would improve one-third remained the same clinical condition personality intelligence

personality intelligence leucotomy BRAIN Initiative

[4] Cracking Go Deep Blue AlphaGo AlphaGo AlphaGo

[5] <http://www.alphago-games.com/> AlphaGo Zero AlphaGo Zero <https://www.101weiqi.com/chessbook/player/38348/>

[6] AlphaGo Master AlphaGo Master AlphaGo Master AlphaGo Master

[7] <http://www.alphago-games.com/> Full Strength of Alphago Zero, i.e. Final

Form 40 Blocks 20 Blocks Not Full Strength of AlphaGo Zero
AlphaGo Zero

[8] AlphaGo Zero can learn to play Go from scratch by playing against itself. It has learned to play Go at a level that is comparable to that of a professional human player.

AlphaGo Zero is a computer program developed by Google DeepMind that can play the board game Go at a level that is comparable to that of a professional human player.

AlphaGo Zero is a computer program developed by Google DeepMind that can play the board game Go at a level that is comparable to that of a professional human player. AlphaGo Zero is a successor to AlphaGo, which was the first computer program to win a game of Go against a human player at the level of a professional human player. AlphaGo Zero is able to learn to play Go from scratch by playing against itself, without being explicitly programmed with rules or knowledge about the game.

AlphaGo Zero is a computer program developed by Google DeepMind that can play the board game Go at a level that is comparable to that of a professional human player.

[9] In 2012, AlphaGo defeated Lee Sedol, a South Korean professional Go player, in a five-game match. In 2015, AlphaGo Zero defeated the previous version of AlphaGo, AlphaGo Lee, in a five-game match.

“Go gaming is strictly defined within a very small space. Industrial automations are typically designed in well controlled environments, but not strictly defined. Car driving is regulated, but the environment is not well controlled”

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[11] Dialogue Concerning the Two Chief Word Systems Socratic Method

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[12] 『タレントプール』 talent pool 『才能の蓄積』 talent pool
『才能の蓄積』 talent pool 『才能の蓄積』 talent pool

『才能の蓄積』 talent pool 『才能の蓄積』 talent pool 『才能の蓄積』 talent pool
『才能の蓄積』 talent pool

[13] Personal computers\Internet\smartphones 『デジタルカメラ』 digital cameras\GPS\smart wearables\virtual reality\quantum computer 『量子コンピュータ』

『デジタルカメラ』 digital cameras\GPS\smart wearables\virtual reality\quantum computer 『量子コンピュータ』

[14] 『技術的奇跡』Universal approximation 『テクノロジカルシグナリティ』Technological Singularity 『アル法ゴー』AlphaGo Zero \ superhuman 『超人間』superhuman

[15] 『数学の歴史』 1819 『フーリエ』Ferdinand Schweikart 『数学の歴史』
『フーリエ』Ferdinand Schweikart 『数学の歴史』

『数学の歴史』 1830 『フーリエ』Ferdinand Schweikart 『数学の歴史』
『フーリエ』Ferdinand Schweikart 『数学の歴史』

『フーリエ』Ferdinand Schweikart 『数学の歴史』

[16] 『数学の歴史』\『フーリエ』“『数学の歴史』\『フーリエ』”

[17] 『数学の歴史』 1819 『フーリエ』Ferdinand Schweikart 『数学の歴史』
『フーリエ』Ferdinand Schweikart 『数学の歴史』

『数学の歴史』 1830 『フーリエ』Ferdinand Schweikart 『数学の歴史』
『フーリエ』Ferdinand Schweikart 『数学の歴史』

『数学の歴史』 1830 『フーリエ』Ferdinand Schweikart 『数学の歴史』

[18] 『数学の歴史』 1819 『フーリエ』Ferdinand Schweikart 『数学の歴史』
『フーリエ』Ferdinand Schweikart 『数学の歴史』